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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,751	12/21/2001	Joel P. Dunsmore	10004016-1	3808

7590 06/25/2003

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EXAMINER
BHAT, ADITYA S

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 06/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/027,751	Applicant(s) DUNSMORE ET AL.	
	Examiner Aditya S Bhat	Art Unit 2863	

-- The MAILING DATE of this communication appears on th cover sh et with the correspondenc address --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,14-19 and 21-32* is/are rejected.

7)☒ Claim(s) *6-13 nd 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 14-19 and 21-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Kapetanic et al. (USPN 6,529,844).

With regards to claim 1, Kapetanic et al. (USPN 6,529,844) teaches a method of extending dynamic range of a test, system that has a receiver channel comprising: compensating for an effect that compression of the receiver channel has on as magnitude response and a phase response of the receiver channel. (Col. 8, lines 1-7)

With regards to claim 16, Kapetanic et al. (USPN 6,529,844) teaches a method of extending dynamic range of a test system comprising: characterizing a reference receiver channel of the test system for a reference magnitude compression response and a reference phase compression response; (see figure 2) characterizing a second receiver channel of the test system for a second magnitude compression response and a second phase compression response: and (see figure 2) compensating for an effect that compression of one or both of the reference channel and the second channel has on measured magnitude data and measured phase data. (Col. 2, lines 15-19)

With regards to claim 27, Kapetanic et al. (USPN 6,529,844) teaches test system having extended dynamic range comprising: a receiver channel; (see figure 2) a controller that processes magnitude data and phase data generated by the receiver channel; (see figure 3 & 764;see figure 7) and a computer program stored in memory, the computer program being executed by the controller, the computer program implementing instructions that compensate for an effect on the generated data caused by the receiver channel being compressed.(Col. 2 lines 50-55)

With regards to claim 2, Kapetanic et al. (USPN 6,529,844) teaches compensating comprises correcting data measured for one of a device under test and a signal under test using the test system. (Col. 2, lines17-20)

With regards to claim 3 Kapetanic et al. (USPN 6,529,844) teaches the test system is one of a network analyzer and a spectrum analyzer. (Col. 3, lines10-15)

With regards to claim 4 Kapetanic et al. (USPN 6,529,844) teaches the compensating comprises: characterizing a first receiver channel of the test system for a first magnitude compression response and a first phase compression response; characterizing a second receiver channel of the test system for a second magnitude compression response and a second phase compression response; and (Col.1, lines 24-27) compensating magnitude and phase data for the compression responses of each of the channels, the magnitude and phase data being measured by the first channel and the second channel. (Col. 2,lines 17-20)

With regards to claim 5, Kapetanic et al. (USPN 6,529,844) teaches characterizing the first receiver channel, characterizing the second receiver channel,

and compensating data is performed sequentially at one or more of a plurality of different frequencies within a range of frequencies(Col. 2,lines 17-20)

With regards to claim 14, Kapetanic et al. (USPN 6,529,844) teaches characterizing the first receiver channel and characterizing the second receiver channel each comprises: driving the receiver channel into compression, such that the channel has nonlinear behavior; and determining a deviation from linear behavior of the compressed receiver channel. (Col. 3, lines 17-30)

With regards to claim 15, Kapetanic et al. (USPN 6,529,844) teaches, wherein driving and determining are repeated at a plurality of different frequencies. (Col.3, lines 20-21)

With regards to claim 17, Kapetanic et al. (USPN 6,529,844) teaches the reference channel is characterized comprising: applying an input signal to an input of the reference channel and to an input of the second channel, the input signal having a plurality of different power levels, wherein at least one of the power levels drives the reference channel into compression, while the second channel is non-compressed; (See figure 7) measuring the reference magnitude compression response and the reference phase compression response of the reference channel, the phase compression response being measured relative to the second channel; (Col. 1,lines 25-26) and determining a magnitude compensation and a phase compensation for the reference channel as a function of the plurality of power levels of the input signal. (Col. 1 lines 52-56)

With regards to claim 18, Kapetanic et al. (USPN 6,529,844) teaches second channel is characterized comprising: applying another input signal (Col.3 lines 2-5) to the input of the second channel and to the input of the reference channel, the other input signal having another plurality of power levels; wherein at least one of the power levels drives the second channel into compression; (See figure 7) measuring the second magnitude compression response and the second phase compression response of the second channel, the second phase compression response being measured relative to the reference channel; (Col. 1,lines 25-26) and determining a magnitude compensation and a phase compensation for the second channel as a function of the other plurality of power levels of the other input signal. (Col. 1 lines 52-56)

With regards to claim 19, Kapetanic et al. (USPN 6,529,844) teaches comprising attenuating the input signal before the input signal is applied to the second channel to achieve the second channel non-compression.(748;Col. 6, line 25)

With regards to claim 21, Kapetanic et al. (USPN 6,529,844) teaches compensating comprises using magnitude compensations and phase compensations determined for the reference channel and the second channel to correct the measured data.(Col. 1, lines23-27)

With regards to claim 22, Kapetanic et al. (USPN 6,529,844) teaches the measured magnitude data and the measured phase data are measured for one of a device under test and a signal under test using the reference channel and the second channel of the test system.(Col. 1, lines23-27)

With regards to claim 23, Kapetanic et al. (USPN 6,529,844) teaches characterizing the reference channel and characterizing the second channel are performed periodically, while compensating is performed for each data measurement of one of a device under test and a signal under test. (Col.2 lines 17-20)

With regards to claim 24, Kapetanic et al. (USPN 6,529,844) teaches the test system comprises more channels than the reference channel and the second channel, and wherein characterizing is performed sequentially for different pairs of channels in the test system. (Col. 6, lines 59-63)

With regards to claim 25, Kapetanic et al. (USPN 6,529,844) teaches the test system comprises a single receiver channel, one of the reference channel and the second channel being an implicit channel. (see figure 2)

With regards to claim 26, Kapetanic et al. (USPN 6,529,844) teaches characterizing the reference receiver channel, characterizing the second receiver channel, and compensating are performed sequentially at one or more frequencies. (Col. 2, lines 16-19)

With regards to claim 28, Kapetanic et al. (USPN 6,529,844) teaches a power limner connected to an input of the receiver channel, wherein the instructions implemented by the computer program further compensate for an effect on the generated data caused by the limiter being compressed. (748;Col. 6, lines 25-26)

With regards to claim 29, Kapetanic et al. (USPN 6,529,844) teaches the test system is one of network analyzer and a spectrum analyzer.(Col.3, lines 9-10)

With regards to claim 30, Kapetanic et al. (USPN 6,529,844) teaches

another receiver channel; (see figure 2) and a signal source;(see figure 1) wherein the signal source generates a signal that is applied to the receiver channel, to an input of a device under test, and after passing through the device under test, to the other receiver channel, and wherein phase is measured as a phase difference between the receiver channels.(Col.1 lines 23-55)

With regards to claim 31, Kapetanic et al. (USPN 6,529,844) teaches a power limiter connected to an input of the second receiver channel, wherein the instructions implemented by the computer program further compensate for an effect on the generated data caused by the limiter being compressed. (748;Col. 6, lines 25-26)

With regards to claim 32, Kapetanic et al. (USPN 6,529,844) teaches a computer program further implements instructions that drive the receiver channel into compression, such that the channel has non-linear behavior; and that determine a deviation from linear behavior of the compressed receiver channel, the deviation being the effect on the generated data. (Col. 2, lines 51-52)

Claim Objections

Claims 6-13 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wadell (USPN 6,066953) teaches architecture for RF signal automatic test equipment, Raychaudhuri (USPN 5,122,875) teaches an HDTV

compression system, Van Veen et al. 2003/0088180 teaches a space time microwave imaging for cancer detection, Peache et al. (USPN 6,300,775) teaches scattering parameter calibration system and method, Chodora (USPN 6,147,501) automatic calibration of a network analyzer, Bradley (USPN 5,773,985) teaches one port complex transmission and group delay measurements, Oldfiled et al (USPN 5,825,669) teaches a method of updating automatic calibration to provide perceived perfect through connection, and Oldfiled et al (USPN 5,587,934) teaches automatic VNA calibration apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S Bhat whose telephone number is 703-308-0332. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Aditya Bhat
June 20, 2003

John Barlow
Supervisory Patent Examiner
Technology Center 2800